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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,052	09/12/2003	Brian Thomas Branecky	010121-9911-00	8331
23409	7590	08/24/2005		EXAMINER
MICHAEL BEST & FRIEDRICH, LLP 100 E WISCONSIN AVENUE MILWAUKEE, WI 53202			MCLOUD, RENATA D	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/662,052	BRANECKY ET AL.
	Examiner Renata McCloud	Art Unit 2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 06 June 2005.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-3,7,8,10-16,20-26,28,29,32,34-41,45,46,48-54 and 56-58 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-3,7,8,10-16,20-26,28,29,32,34-41,45,46,48-54 and 56-58 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 34 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim depends from cancelled claim 33.

***Double Patenting***

3. Claim 25 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 23. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3,7,8,11,13,15,16,20,22,24,39-41,45,46,49,51,53,54,56-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazaki et al (US 5212438).

**Claims 1, 7:** a controller comprising a switch (2/6) coupled to a motor (1) having a plurality of power inputs (inputs to 2/6) and operable to couple one of the inputs to the motor (1); a first voltage input coupled to one of the power inputs (PS) of the switch (2), and configured to receive a first voltage (voltage from PS), and operable to provide the first voltage to the switch (2); an inverter (5) coupled to a second voltage input (PS) and a second power input of the switch (6) and configured to be activated by a second voltage (voltage from 5) received at the second voltage input to frequency regulate the second voltage to generate a frequency regulated voltage (the voltage is frequency regulated by the inverter 5) and to provide the frequency regulated voltage to the switch (6); a summing module (Fig. 1: summing node above 19, Fig. 2: node below 18) coupled to the voltage inputs to receive the first and second voltages and configured to generate different signals represents the receipt of the voltages; and a controller (15 or Fig. 8:43) coupled to the module to receive the different signals and configured to generate a control signal based on the different signals and to selectively control the coupling of one of the first voltage and the frequency regulated voltage to the motor (Col. 4:32-49).

**Claims 2,16,40:** a monitor (28) for monitoring the frequency regulated voltage and to configure the inverter to regulate the inverter output (col. 4:14-21).

**Claims 3,20,41:** a relay (2) to relay an AC current as the first voltage and to generate the second voltage using the AC source.

**Claims 8,46:** a rectifying module (3) coupled to the inverter (5) and configured to power the inverter.

**Claims 11, 22, and 49:** a multi-tapped motor (Fig. 1: 1), and the first voltage (PS at 2) represents one of plurality of motor speed at one operating frequency (col. 1:30-51; 2:15-18).

**Claims 13, 24, and 51:** the machine comprises a single speed motor, the first voltage represents a motor speed at one operating frequency (Col. 1:15-20; 2:15-30, multi-speed is comprised of a single speed ).

**Claim 15:** a controller comprising a voltage input (2/6) to receive a first voltage (voltage from PS); a relay module (2/6) coupled to a voltage input (input to 2) and to generate a second voltage; a controller (15 or Fig. 8:43) coupled to the module to receive the voltages and configured to generate a control signal; a second relay (16) coupled to the microcontroller to select an electric machine operating voltage and the frequency regulated voltage using the control signal; and a summing module (Fig. 1: summing node above 19, Fig. 2: node below 18) coupled to the voltage inputs to receive the first and second voltages and configured to generate different signals represents the receipt of the voltages.

**Claims 39,45:** a controller comprising an inverter (5) to receive a first voltage (voltage along PS) to be activated by the first voltage to frequency regulate the first voltage; and a switch (2/6) coupled to the inverter (5) configured to receive the frequency regulated voltage (voltage from 5) and a second voltage (voltage from PS) and to apply one of the voltages to the machine (1); a summing module (Fig. 1: summing node above 19, Fig. 2: node below 18) coupled to the voltage inputs to receive the first and second voltages and configured to generate different signals represents the receipt of the voltages; and a controller (15 or Fig. 8:43) coupled to the module to receive the different signals and configured to generate a control signal based on the different signals and to selectively control the coupling of one of the first voltage and the frequency regulated voltage to the motor (Col. 4:32-49).

**Claim 53:** a method comprising receiving power at a relay (2/6); controlling the relay to apply power to a first node (11) and a second node (9) of the controller; detecting whether the power is present at the first node (11) and second node (9); generating a signal based on the

detecting (signal from summing node); and using the detected power to energize motor (1) when the signal indicates power is present at least one of the first and second nodes (the motor is energized when the power (PS) is present).

**Claim 54:** providing the detected power to the inverter (5), the inverter generating an inverter power and using the inverted power to energize the motor (1).

**Claim 56:** the power detecting comprises detecting whether a voltage is present (9 senses power from PS).

**Claim 57:** generating a first signal based at least in part on the act of detecting whether power is present at the first node (11) of the controller; generating a second signal based at least in part on the act of detecting whether power is present at the second node (9).

**Claim 58:** a motor (4), a relay (2/6) to receive power and controllable to provide a first power (PS) and a second power (from 5); a controller (15) connected to the motor and the relay, the controller comprising a first node (9) to receive a first power, a second node to receive a second power (11); a first circuit (summing node) to detect whether the first and second powers are at the first and second nodes and generate a signal; a second circuit (15) to receive the at least one signal and generate a switch control signal, and a switch (2 or 6) to energize the motor based at least in part on the switch control signal, the switch using at least one of the first and second powers to energize the motor when the signal indicates that at least one of the first and second powers is present at one of the first and second nodes (9,11).

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject

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matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10,12,14,21,23,25,26,28,29,32,35-38,48,50,52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al (US 5212438) in view of Lipo et al (US6570778).

**Claims 10, 21, 48:** Miyazaki et al teach the limitations of claims 1,15, 39. Referring to claims 10, 21, 48, they do not specify high and low speeds. Lipo et al teach high and low speeds (Fig. 3:full speed and low speed). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Miyazaki et al to select a speed as taught by Lipo et al in order to adjust the voltage supplied to the motor to achieve a desired operating speed.

**Claims 12, 14, 23, and 25 50,52:** Miyazaki et al teach the limitations of claims 11,13,15,49, 51. Referring to claims 12, 14,23,25,50,52, they do not teach the frequency being 60Hz. Lipo et al teach the operating frequency s 60 Hz (60Hz, Col. 6: 10-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Miyazaki et al use a frequency of 60 Hz as taught by Lipo et al in order to drive the motor a high speed.

**Claim 26:** Miyazaki et al teach a method comprising proving a source of power (PS) to a machine (1) through a relay (2/6) when a first speed is selected; generating a second source (power from 5) of power when a second speed is selected, the second source (5) connected to the machine through the relay (2/6); switching the relay (2/6) to connect the machine to the one source (PS) corresponding to the first speed and to the second source (from 5) corresponding to the second speed; detecting a summed voltage (e.g. Fig. 2:summing node below 18); generating a control signal to select the switch; and enabling the switch once the summed

voltage corresponds to a speed (col. 4:33-49; col. 8:43-60). They do not teach inputting the summed voltage into an A-D converter. Lipo et al teaches providing power to a relay (40) when a first speed is selected (Fig. 3: 140, full-speed/speed) generating a second source (power from 30) of power when a second speed is selected (Fig. 3: 140, full-speed/speed), the second source (30) connected to the machine through the relay (40); switching the relay (30) to connect the machine to the one source (21) corresponding to the first speed and to the second source (from 30) corresponding to the second speed; digitizing the voltage signal before the signal is fed to the motor (Fig. 3: 94). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Miyazaki et al to use an A/D converter as taught by Lipo et al in order to more precisely control the power supplied to the motor.

**Claim 28:** Miyazaki et al and Lipo et al teach the limitations of claim 26. Referring to claim 28, Miyazaki et al teach providing conventional line power (PS) to the voltage source. Lipo et al also teach providing conventional line power (21) to the voltage source.

**Claim 29:** Miyazaki et al and Lipo et al teach the limitations of claim 26. Referring to claim 29, Miyazaki et al teach generating the second source of power (power from 5) comprises activating an inverter (5) connected to the one source of power (PS). Lipo et al also teach generating the second source of power (power from 30) comprises activating an inverter (30) connected to the one source of power (21).

**Claim 32:** Miyazaki et al and Lipo et al teach the limitations of claim 26. Referring to claim 32, Miyazaki et al teach generating a control signal at the microcontroller (15) based on the speeds and applying the signal to the relay (col. 4:33-49). Lipo et al also teach generating a control signal at the microcontroller (55) based on the speeds (Fig. 3: 140/142) and applying the signal to the relay (Fig. 3:through line 57).

**Claim 35:** Miyazaki et al teach the limitations of claim 26 and referring to claim 35, a multitapped motor (1). They do not teach running the motor at the first speed with the one operating frequency when the first speed is selected. Lipo et al teach running a multitapped motor at a first speed with the one operating frequency when the first speed is selected (60Hz; Col. 6: 10-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Miyazaki et al to select a speed as taught by Lipo et al in order to adjust the voltage supplied to the motor to achieve a desired operating speed

**Claim 36:** Miyazaki et al teach the limitations of claim 26. Referring to claims 36, they do not teach the operating frequency is 60 Hz. Lipo et al teach the operating frequency s 60 Hz (60Hz, Col. 6: 10-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Miyazaki et al use a frequency of 60 Hz as taught by Lipo et al in order to drive the motor a high speed.

**Claim 37:** Miyazaki et al teach the limitations of claim 26 and referring to claim 35, a single speed motor (1). They do not teach running the motor at the first speed with the one operating frequency when the first speed is selected. Lipo et al teach running a single speed motor at the first speed with the one operating frequency when the first speed is selected (60Hz; Col. 6: 10-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Miyazaki et al to select a speed as taught by Lipo et al in order to adjust the voltage supplied to the motor to achieve a desired operating speed.

**Claim 38:** Miyazaki et al and Lipo et al teach the limitations of claim 37. Referring to claim 38, Lipo et al teach the operating frequency s 60 Hz (60Hz, Col. 6: 10-20).

8. Claims 10,12,14,21,23,25,48,50,52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al (US 5212438) in view of Tolbert Jr, et al (US6172476).

**Claims 10, 21, 48:** Miyazaki et al teach the limitations of claims 1,15, 39. Referring to claims 10, 21, 48, they do not specify high and low speeds. Tolbert et al teach the first voltage indicated a high speed excitation (Col. 5:20-30) and the second voltage indicates low speed excitation (Col. 5:32-39). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Miyazaki et al to select a speed as taught by Tolbert et al in order to supply voltage to drive the motor at full and partial speeds.

**Claims 12,14,23,25 50,52:** Miyazaki et al teach the limitations of claims 11,13,15,49,51. Referring to claims 12,14,23,25,50, 52,they do not teach the frequency being 60Hz. Tolbert et al teach the frequency is 60 Hz (Col. 5:20-27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Miyazaki et al to select a speed as taught by Tolbert et al in order to supply voltage to drive the motor at full speed.

#### *Response to Arguments*

9. Applicant's arguments with respect to claims 1-3,7,8,10-16,20-26,28,29,32,34-41,45,46,48-54 and 56-58 have been considered but are moot in view of the new ground(s) of rejection.

#### *Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

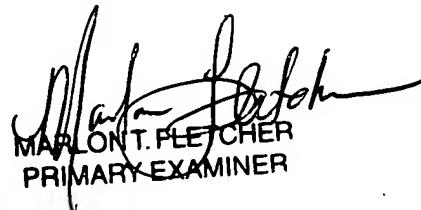
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Renata McCloud  
Examiner  
Art Unit 2837

RDM



Marlon T. Fletcher  
PRIMARY EXAMINER